



Forest Health Protection Pacific Southwest Region



Date: April 10, 2019

File Code: 3400

To: Patricia Grantham, Forest Supervisor, Klamath National Forest

Subject: Juanita Plantations Project and field assessment of Juanita Lake Recreation Area

At the request of Mike Reed a site visit was made to the Juanita Lake Campground and Juanita Plantations project area on May 30, 2018. The objectives were to assess the current stand conditions for insect and disease activity. Laura Allen, Mike Reed, Travis Coughlin, and Dory Shreve (Klamath NF), Pete Angwin, and Cynthia Snyder (FHP) attended.

Background

The Juanita Lake Recreation Area consists of mixed conifer forest surrounding the 54 acre Juanita Lake. There are 23 individual campsites, 1 group camp site, 6 picnic areas, and other amenities including a highly used paved trail that runs the 1.5 mile circumference of the lake with numerous fishing docks, and a boat launch. Approximately 19,000 people visit (day use or camp) annually making it the Forest's most heavily used campground.

The site was visited in the early 2000's by Pete Angwin and Dave Schultz resulting in a vegetation management plan that was prepared by the Forest in 2005 (Siemers et al. 2005) to maintain safe conditions at the entire recreation area. Of major concern at the time was forest density and dwarf mistletoe in the ponderosa pine (*Pinus ponderosa*) leading to tree mortality and hazard tree removal. The current visit was to help evaluate hazard tree conditions and to assess ongoing white fir (*Abies concolor*) mortality on the far side of the lake.

A previous visit to the Juanita Plantations was made at the request of Sam Solano, District Silviculturist, on June 2, 2011 (FHP report N11-10). The plantations visited were located north and east of Juanita Lake and all within the Goosenest Late Successional Reserve (LSR). The proposed Juanita Plantations Project in 2011 consisted of approximately 224 acres of commercial and non-commercial thinning to maintain late successional habitat while reducing the dual risks of insect/disease mortality and wildfire along the southeast edge of the 39,770 acre Goosenest LSR. NEPA was complete in 2005 (Goosenest Late Successional Reserve, Southeast Habitat Restoration Environmental Assessment August 29, 2005).

NORTHERN CALIFORNIA SHARED SERVICE AREA
3644 AVTECH PARKWAY, REDDING, CA 96002
(530) 226-2437

Cynthia Snyder
clsnyder@fs.fed.us

Pete Angwin
pangwin@fs.fed.us

The current Juanita Plantations Project, visited in 2018, consists of approximately 494 acres of commercial thinning of which 165 acres are under the 2005 NEPA (Figure 1).

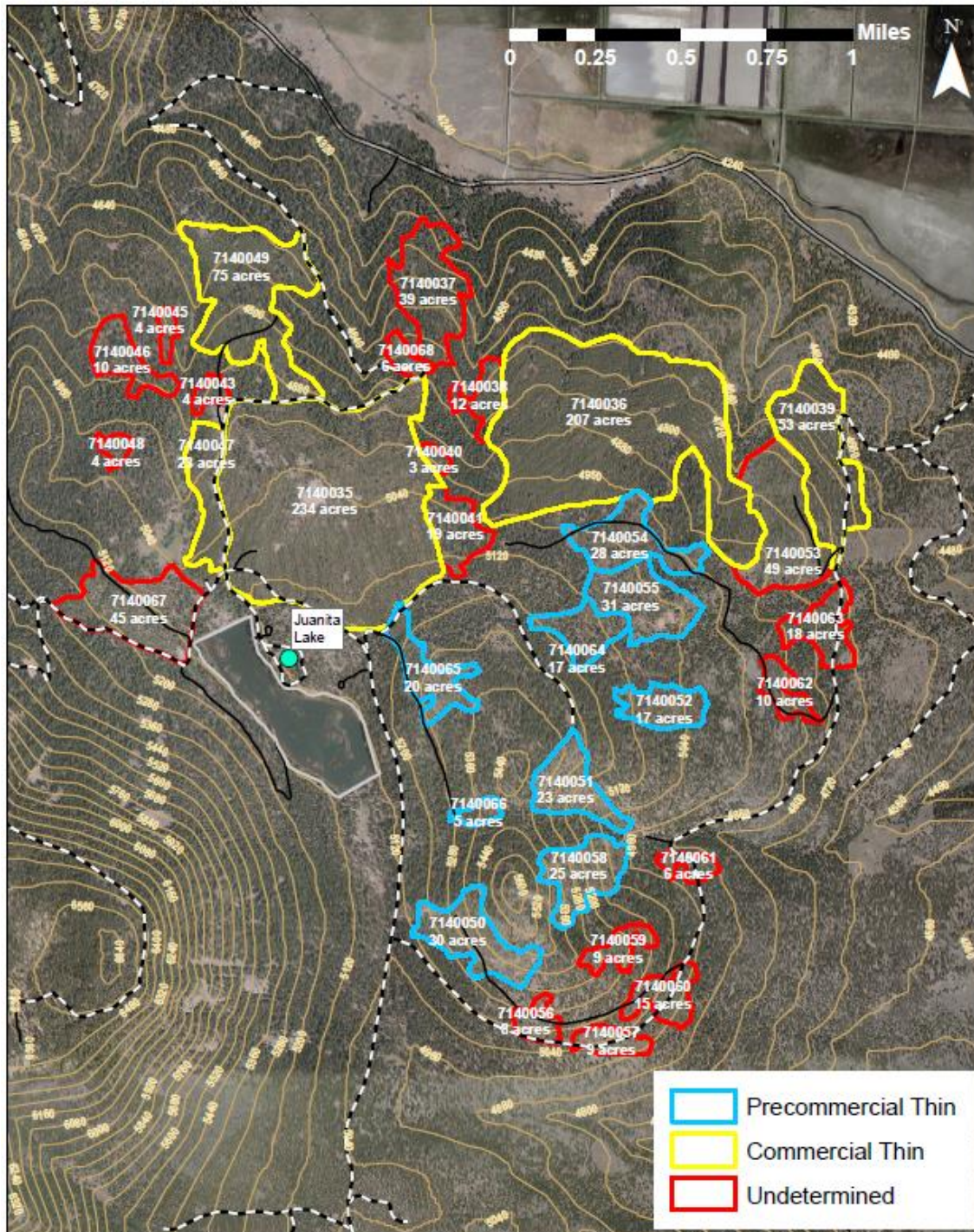


Figure 1. Juanita Lake Campground and surrounding plantations in the Juanita Plantations Project being planned for FY2019.

Aerial Survey data (2015-2017 ADS) show increasing mortality occurring at levels of approximately one tree per acre in white fir and ponderosa pine throughout the area in 2015, averaging three trees per acre in 2016, and eight trees per acre in 2017 (Figure 2).

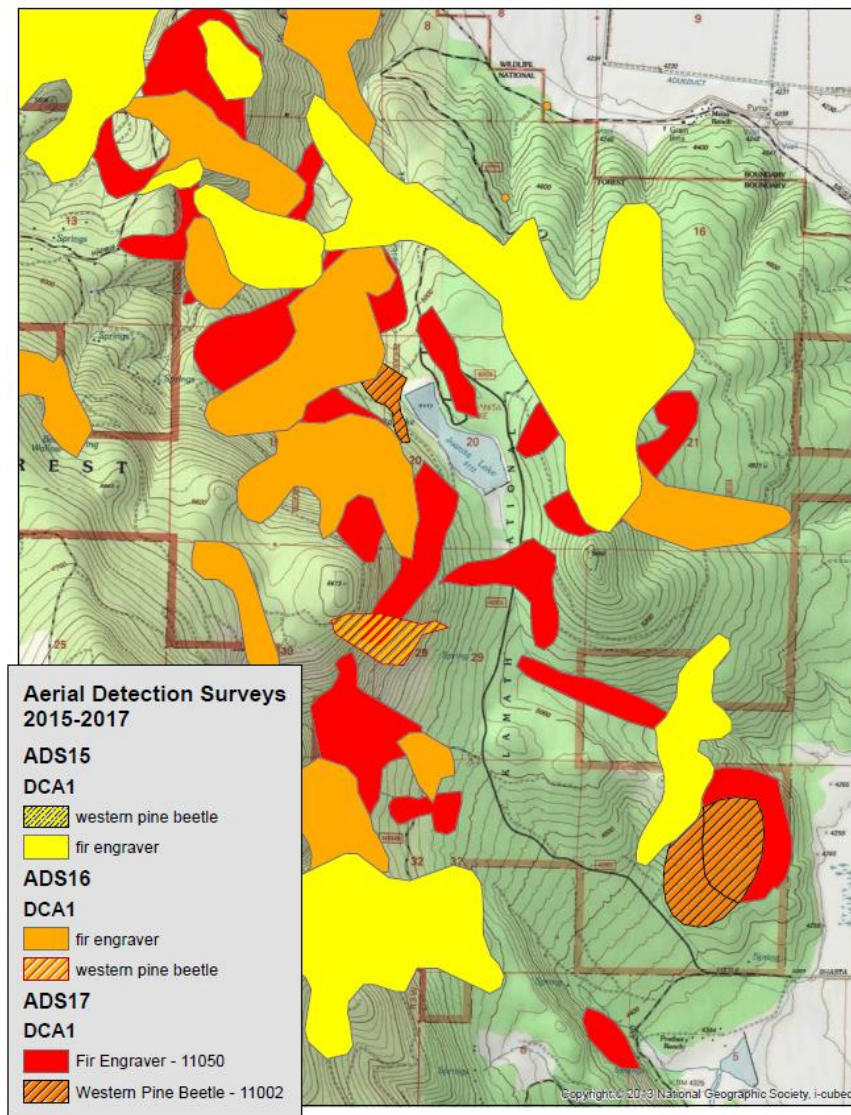


Figure 2. Aerial Detection Surveys 2015-2017 point out white fir and ponderosa pine mortality across the project area.

Most of the stands covered by the Goosenest LSR Habitat Restoration NEPA are dense, young to middle-aged, with only a few small patches of remnant large, old trees. Although the area provides habitat for northern spotted owl and bald eagle, the habitat is in poor condition. Currently, the area is dominated by mid-successional stands, 60 to 80

years old, and lack structural diversity, especially large trees. Average diameters in the commercial thinning units ranges from 10 to 15 inches.

Observations

Juanita Lake campground is experiencing some white fir mortality near the parking area, at the edge of one of the picnic sites. Evidence of fir engraver beetle (*Scolytus ventralis*) was present in all dead trees (Figure 3).



Figure 3. Fir engraver beetle galleries present on dead white fir in picnic area near parking.

Dead white fir continued around the northwest and west shore of the lake in patches of 3-30+ trees. In the largest patch of mortality a stump with fresh *Heterobasidion occidentale* conks was found which led to the discovery of more infected stumps in the same area. Fir engraver beetle was attacking the infected trees and mortality has been increasing substantially over the past several years. Many of the white fir on the west side of the lake were infested with dwarf mistletoe causing increased water stress on the affected trees.

The increasing levels of mortality have been continually “chased” (Figure 4) leaving heavy fuel loads around the lake. The cutting of dead white fir has not adequately addressed the issue of the root disease.

Aspen release has been occurring around the lake. The aspen has been responding well to the openings (Figure 5).

Ips and California flatheaded borer were found to be the cause of mortality in two ponderosa pines in the group camp. These were most likely responding to the recent drought and poor soil conditions. It was discussed that a thorough hazard tree assessment was due for the campground and that hazard trees in the campground and within one tree length of the paved trail should be addressed.



Figure 4. Heavy fuel loading near the lake trail.



Figure 5. Aspen saplings responding to open conditions around the lake.

Two stands, thought to be indicative of the plantations as a whole, were visited. These pine plantations are approximately 55 years old with stand density indices above 300. Stand 7140035 was thinned in 1974 and again in the 1990's. The ponderosa pine is currently about 15 inches in diameter with a basal area of 200 square feet per acre (Figure 6). There is white fir and incense cedar in the understory. Western pine beetle has caused tree mortality in patches of 1-2 trees. Stand 7140047 was planted about the same time frame as 7140035, but was not thinned (Figure 7). It has an average diameter of 14 inches with basal area of 180. Mortality in this stand is much greater with patches of 5+ trees being affected ever the past couple of years and new mortality in 2018 that has not faded yet.



Figure 6. Plantation stand thinned in 1974 and again in 1990's; BA 200 and average DBH 15 inches.



Figure 7. Plantation unit not thinned in 1990's; BA 180 and average DBH 14 inches.

Discussion

It was discussed that the vegetation management plan needs to be followed. There may be a need to update it to match the current issues facing the area. Hazard trees need to be assessed on a regular basis and safety needs to remain the number one priority at the recreation area.

Heterobasidion root disease will remain a constant issue at the recreation area because the pathogen remains active in stumps and root systems 35 or more years after the affected tree dies. Cutting the dead trees removes the immediate hazard from that tree but does not address the root contacts and it is possible for affected trees to fail before mortality occurs. The root disease centers need to be identified and treatment of all trees within the centers needs to be assessed as hazards where target is present. Conversion to non-host such as ponderosa pine or incense cedar may be an option.

The plantations are at risk of continued western pine beetle-caused mortality in ponderosa pine due primarily to overstocking. As with most bark beetles, the most economical and efficient means of management is to maintain trees and stands in a healthy condition. Stocking reduction and creation of diverse stand conditions reduce overall susceptibility to western pine beetle.

The original Goosenest LSR project included commercial and non-commercial thinning to maintain late successional habitat while reducing the dual risks of insect/disease mortality and wildfire. Under that proposed action, treatment prescriptions generally included thinning from below with variable spacing to reduce ladder fuels, reduce tree density, reduce competition between overstory trees, and promote future structural variability within stands. Prescribed underburning, mastication, hand-piling and burning, and piling with tractor used to treat fuels on the ground. Many of the same treatments are proposed in the new project. There is currently an opportunity to significantly reduce the amount of susceptible pine within the stands, reduce overall stand density to a sustainable level, increase species diversity and meet other management objectives such as restoring habitat for wildlife and promoting conditions that will further these stands toward late successional status.

Currently, Northern California is experiencing higher than normal precipitation including snowpack levels. This has had a dramatic effect of reducing bark beetle mortality in stands with endemic bark beetle populations. Without project implementation, there exists a high probability that these stands will be significantly impacted by western pine beetle caused tree mortality when drought conditions resume in Northern California.

If you have any questions regarding this report and/or need additional information, please contact Cynthia Snyder at 530-226-2437 or Pete Angwin at 530-226-2436.

/s/ Cynthia Snyder

CC: Mike Reed, Travis Coughlin, Chris Losi, Sheri Smith, Phil Cannon, Sherry Hazlehurst, and Chris Fischer